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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,215	12/27/2000	Munenori Iizuka	Q62482	5359

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EXAMINER

PATTERSON, MARC A

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,215

Applicant(s)

IIZUKA ET AL.

Examiner

Marc A Patterson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1 – 9, drawn to a resin pipe, classified in class 428, subclass 36.9.
 - II. Claim 10, drawn to a method of producing a resin pipe, classified in class 264, subclass 177.2.
 - III. Claims 11 – 21, drawn to a cylindrical base for photosensitive drums, classified in class 399, subclass 159.

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process, such as using a mold which does not comprise a movable plate.

3. Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as

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claimed because it is not necessary for the tapered inner surface of the pipe to have a part which is parallel to the axis. The subcombination has separate utility such as a base for a drum in which a part which is parallel to the axis is necessary.

4. Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process, such as using a mold which does not comprise a movable plate.

5. Because these inventions are distinct for the reasons described above, and have acquired a separate status in the art because of their recognized different classification and subject matter, and because the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Mr. Paul Neils on February 12, 2002 a provisional election was made without traverse to prosecute the invention of I, claims 1 – 9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10 – 21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of the term 'equation' is indefinite. The limitation which specifies the tangent of the taper angle, in the last line of the claim, is not an equation, as it does not contain an 'equal to' sign.

9. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase 'flange – like' is indefinite, as it is unclear whether the invention comprises a flange or not. For purposes of examination, the phrase will be assumed to mean 'flange.'

10. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase 'to be mounted' is indefinite because it is not clear whether the pipe is mounted or not. For purposes of examination, the phrase will be assumed to mean 'is mounted.'
- Correction and / or clarification is required.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 6 – 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawata et al (U.S. Patent No. 5,890,395).

With regard to Claim 6, Kawata et al disclose a resin pipe (cylindrical tube made from resin; column 4, lines 33 – 55), the resin pipe having an integrally molded projection radially protruding outward from one end of its outer surface (the cylindrical tube and a coaxial cylindrical driving flange are molded in first and second molding steps; column 5, lines 1 – 33).

With regard to Claim 7, the projection is a flange formed on the entire outer circumference of one end of the outer surface (column 5, lines 39 – 49; Figure 1A).

With regard to Claim 8, the pipe is an electrophotographic photoconductor (column 3, lines 12 – 25); the claimed aspect of the pipe being a ‘cylindrical base for the photosensitive drum to be mounted in an electrophotographic apparatus’ therefore reads on Kawata et al.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1 – 2 and 4 – 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bito et al. (U.S. Patent No. 5,983,055).

With regard to Claims 1 and 5, Bito et al disclose a resin pipe (cylindrical body of synthetic resin; column 1, lines 50 – 59), which is a base for a photosensitive drum (column 28, line 49), which is formed by injection molding a thermoplastic resin (nylon; column 29, lines 64 – 67; column 30, lines 1 – 7); the resin pipe has a tapered inner surface to facilitate demolding (column 27, lines 2 – 10). Bito et al fail to disclose a taper angle having a tangent between 0.5×10^{-3} and 3.5×10^{-3} . However, Bito et al. disclose a taper angle having a tangent of 3.6×10^{-3} (the size of the body is 270 – 280 mm, 27 mm inner diameter at one end and 28 mm inner diameter at the opposite end; column 27, lines 57 – 61; Figure 2). Therefore, the taper angle would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the taper angle, since the taper angle would be readily determined through routine experimentation by one having ordinary skill in the art depending on the desired end result as shown by Bito et al *In re Dailey et al.*, 119 USPQ 47 (CCPA 1966).

With regard to Claims 2 and 4, the pipe is formed by injection molding from an electrically conductive resin compound composed of a thermoplastic resin and a conducting material dispersed therein (carbon black, which is also a reinforcing inorganic filler; column 27, lines 62 – 67; column 28, lines 1 – 14).

15. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bito et al. (U.S. Patent No. 5,983,055) in view of Nishimuro et al (U.S. Patent No. 5,991,574).

Bito et al disclose a resin pipe comprising nylon as discussed above. Bito et al fail to disclose a resin pipe comprising nylon 6 (nylon obtained from caprolactam).

Nishimuro et al teach the use of nylon 6 in the making of a resin pipe (column 2, lines 64 – 67; column 3, lines 1 – 8) for the purpose of making a photosensitive drum having enhanced reliability (column 1, lines 65 – 66; column 2, lines 1 – 3).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for nylon 6 in Bito et al in order to make a photosensitive drum having enhanced reliability as taught by Nishimuro et al.

16. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata et al (U.S. Patent No. 5,890,395) in view of Nishimuro et al (U.S. Patent No. 5,991,574).

Kawata et al disclose a resin pipe comprising polyphenylene sulfide as discussed above. Kawata et al fail to disclose a resin pipe comprising nylon 6 (nylon obtained from caprolactam).

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Nishimuro et al teach that polyphenylene sulfide and nylon 6 are equivalent in the making of a resin pipe (column 3, lines 3 - 8) for the purpose of making a photosensitive drum having enhanced reliability (column 1, lines 65 - 66; column 2, lines 1 - 3).

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for nylon 6 in Kawata et al in order to make a photosensitive drum having enhanced reliability as taught by Nishimuro et al.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

Marc Patterson
Art Unit 1772

Harold Pyon
HAROLD PYON
SUPERVISORY PATENT EXAMINER
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6/3/02